

Amendments to the Drawings:

The replacement sheets in the Appendix include changes to Figure 1 and 7. In Figure 1, the element number 120 has been changed to element number 8 (the pin) and a line has been added extending from element number 72. In Figure 7 (this replacement sheet also includes Figures 6 and 8 that have not been changed), element number 72 has been changed to element number 76 and element number 70 has been changed to element number 74.

Remarks

As requested, a new copy of the specification as filed accompanies this response. No amendments have been entered in the new copy of the specification.

The specification and drawings have been amended to make editorial changes therein, bearing in mind the criticisms in the Official Action, to place the application in condition for allowance at the time of the next Official Action. Note that Figure 4 is described at the top of page 5 as showing the working position and Figure 5 is described as showing the folded position. In view of this, the numbers 44 and 46 in Figures 4 and 5 have not been changed, but the specification has been changed at page 7, lines 6-7 and page 11, line 5 to be in agreement with the description of the drawings.

The Official Action objects to the form of claim 8. The claims have been replaced with new claims and withdrawal of the objection is respectfully requested.

Please make of record the two declarations in the Appendix.

Claims 1-2 and 4-5 were rejected as anticipated by SOLAJA 4,521,980. Claim 3 was rejected as unpatentable over SOLAJA in view of FULTON 6,202,328. Claims 6-8 were rejected as unpatentable over SOLAJA in view of HUNDEBY et al. 6,293,352. Claims 9-12 were rejected as unpatentable over SOLAJA in view of PATTERSON et al. 3,751,071. Reconsideration and withdrawal of

the rejections are respectfully requested in view of the new claims.

The applied references do not disclose (a) that means are provided for pivotally connecting the forward end of the drawbar arrangement to towing means on the prime mover and (b) that means are provided for connecting the drawbar and the carrier together in such manner that the carrier is unable to rotate axially with respect to the drawbar. Accordingly, the new claims avoid the rejections under §102 and §103.

The field leveling of the present invention is achieved by providing for the position of the blade relative to the carrier to be controlled by lifting or lowering the forward end of the drawbar, i.e. the end that is connected to the tractor. The Declarations show that this is not possible in SOLOJA due to the nature of the construction of a front end loader.

The Declarations of Short and Sieling make it clear that none of the references is capable of achieving the very finely controlled degree of leveling achieved by the present invention in modern farming practice. It is submitted that there are significant differences in the operating requirements of ground leveling machines and the other machines disclosed in the references. These differences need to be taken into account in considering the question of obviousness.

Regarding SOLOJA, it will be clear from the declarations of Short and Sieling that the man of ordinary skill

in the art would know that a front end loader is not suitable for fine leveling. It is therefore respectfully suggested that it can by no means be taken for granted that the man of the art would understand, on reading SOLAJA, that the control would be improved by using the apparatus with the carrier resting on the ground, especially since there is no suggestion of such use in the specification. The limitations now introduced in the new claims clarify the nature of the drawbar and the connection to the prime mover at the forward end of the drawbar, which allows pivoting between the drawbar and the towing means. This connection also allows sideways pivoting of the drawbar. This connection, together with the rigid connection between the carrier and the rear end of the drawbar, also allows the position of blade relative to the ground to be finely controlled by small up or down movements of the forward end of the drawbar. This combination of features is important for the fine leveling of the present invention and is absent from SOLOJA.

HUNDEBY et al. disclose a tilling and sowing machine and does not describe the ground engaging tools in detail. It is clear from Sieling's Declaration however (paragraph 23, page 10) that the HUNDEBY et al. apparatus would be similar to conventional equipment of this kind in that, while the apparatus rides on wheels that follow the ground contour, each of the tilling/sowing tools would find its own level. This level would be determined essentially by a ground wheel mounted at the back

of each tool. The profile of the tools in HUNDEBY et al. Figure 3 suggests such a wheel and an example of this is shown in U.S. Patent 4,049,061 (VAN DER LELY) which also discloses a tilling machine in which the level of the tools is determined by the wheels 20. In both HUNDEBY et al. and VAN DER LELY, changes to the height of the forward end of the drawbar do not affect the working height of the tools.

It is respectfully submitted that the evidence of record shows that (a) there is a reasonable probability that it is only with knowledge of the present invention that SOLAJA appears to suggest the possibility of operating with the blade level with the bottom of the carrier and the carrier skidding over the ground; (b) even given this possibility, the artisan would reject the SOLAJA apparatus for anything but rough leveling; (c) the tool bars of the HUNDEBY et al. machine find their own level and this is unaffected by changes in the height of the drawbar; (d) it therefore seems extremely unlikely that experienced people would be led to the invention as now defined in claim 14.

PATTERSON et al. disclose a ploughing machine and this patent also does not describe the ground engaging tools (plough shares) in detail. It is clear from Sieling's declaration however (paragraph 24, page 11) that the PATTERSON apparatus is similar to conventional equipment of this kind in that, while the apparatus rides on wheels that follow the ground contour, the

banks of plough shares would find their own level and are unaffected by changes in the height of the drawbar. This level would be determined by the angle at which the beam 12 (and hence the shares themselves) is set to the direction of travel. This angle is determined by the degree of off set of the rear wheel.

Again, the evidence shows that it is improbable that one of skill in the art would be led to the invention defined in claim 14 by the disclosures of SOLAJA and PATTERSON et al.

PRATT discloses a similarly arranged planting machine comprising two banks of tools that ride on wheels.

There is no provision in HUNDEBY et al., PATTERSON et al., VAN DER LELY or PRATT for controlled, moment-to-moment adjustment of the working height of the tools and it is clear from Sieling's declaration that there is no call for this in such machines. It is respectfully submitted that the only references that disclose such adjustment are SOLAJA and U.S. Patent 4,236,587 SHADER, both of which disclose leveling machines.

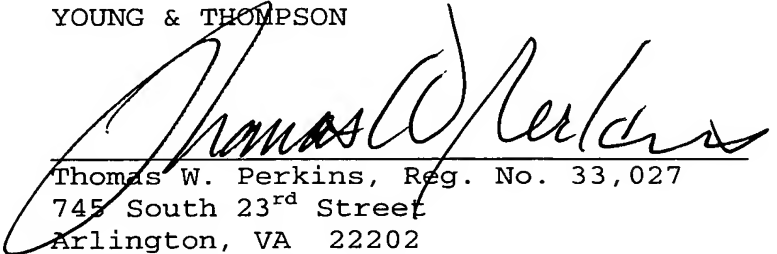
New claim 15 is further distinguishable because SOLAJA does not suggest that the carrier can be dragged over the ground and it is therefore illogical to suggest that his carrier is a wear plate.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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TWP/mjr

Appendix

- two replacement drawing sheets,
- Declaration Nicholaas Sieling,
- Declaration of Bruce Short, and
- a new copy of the specification as filed.